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**FACTORS AFFECTING SMALL HOLDER SHEEP AND GOATS PRODUCTION IN
NYERO SUB COUNTY- KUMI DISTRICT.**

BY



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**A DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE
AND ANIMAL SCIENCES IN PARTIAL FULFILLMENT FOR THE AWARD OF A
BACHELOR'S DEGREE OF ANIMAL PRODUCTION AND MANAGEMENT OF
BUSITEMA UNIVERSITY.**

JUNE, 2015.

DECLARATION.

I, **OTIMONG JOSEPH**, hereby declare that the work submitted in this dissertation is original and a result of my own study. This dissertation has not been submitted for another degree award in this or any other university or institution.

Signature..........Date.....24/05/2015.....


This dissertation has been submitted for marking with the approval of the supervisor.

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DEDICATION.

I dedicate this piece of work to the people of Nyero Sub County who continue to live in conditions not so dignifying yet they continue to struggle to make them change for the better. I further dedicate it to my supervisor Dr. Omiadang Leonard who guided me. My friends, colleagues and family, too many to list here, were behind my effort and God bless you all! My dad Arikod Tom and caring mother Aikomo Rose who inspired and fulfilled all my needs throughout my way and with love I thank you.

ACKNOWLEDGEMENT.

I would like to convey my sincere thanks to my supervisor, Dr. Omadang Leonard for the guidance, encouragement and support that he gave from the time of start up to the end of my research work. I also offer my great pleasure to Dr. Mawadri Patrick and Dr. Okwany Patrick and faculty of Agriculture and Animal Sciences at large for their efforts towards my success.

I also appreciate the staff of Nyero Sub County for accepting me carry out data collection and also small holder sheep and goat farmers for lending me their time, good response and cooperation on point of concern.

I finally wish to take my great thanks to all the students of Busitema University namely: Otim Nathan, Atagal Gabriel, Odongo Isaac and Kiza Ivani during the course of my studies. May the almighty God bless you all.

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LIST OF ABBREVIATIONS.

CCPP	Contagious Caprine Pleuro - Pneumonia.
DAO	District Agricultural Officer.
EARO	Ethiopian Agricultural Research Organization.
FAO	Food and Agricultural Organization.
GDP	Gross Domestic Product.
IBC	Institute of Biodiversity and Conservation.
IFPRI	International Food Policy Research Institute.
ILCA	International Livestock Centre for Africa.
ILRI	Internal Livestock Research Institute.
Kms	Kilometers.
MAAIF	Ministry of Agriculture Animal Industry and Fisheries.
MFPED	Ministry of Finance Planning and Economic Development.
NARO	National Agricultural Research Organization.
NGO	Non-Government Organization.
SSA	Sub- Saharan Africa.
TFS	Teso Farming Systems.
UBOS	Uganda Bureau of Statistics
&	And.
%	percentage

ABSTRACT

This study was undertaken in Nyero Sub County, Kumi district from March to April 2015 with the aim of assessing the factors limiting sheep and goat production among small holder farmers. The parameters surveyed included sex, age, marital status and level of education, experience. Others were goat and sheep breeds kept, management practices used and the limiting factors and the farmer's mitigation measures. Data was collected from 100 smallholder farmers by the use of structured questionnaires. The study found out that 54% of the farmers were males and 46% females. 6% of the farmers were aged < 18 years, 18-34 year were 24% and 70% > 35 years, among these, 10% were illiterate, and a majority (64%) only attained primary education. Most of the respondents were married (75%). The most common breeds of goats and sheep kept was the Small East African for the goats (86%) and Maasai breed for sheep (70%). Livestock farmers (26%) practiced various management systems with a majority (94%) tethering their animals and a few (4%) and (2%) practiced tethering and mixed (tethering and free-range) farming respectively and none (0%) practiced paddocking. Among the constraints identified were: lack of technologies (37%), lack of extension services (25%), lack of clean and safe water (9%), diseases and parasites (5 %), theft (3%) and labour shortage (5%). Among diseases as a constraint: ticks and tick borne diseases constituted the biggest bottleneck, followed by diarrhea (33%), loss of body condition (13%), abortion (10%) and the least being pink eye (2%). The majority of the respondents (80%) reported that they receive extension services, and (20%) had never received extension services. There was inadequate extension provision as half (50%) was provided by unqualified technical staff of the animal health service delivery and only (15%), by qualified veterinary officers and (35%) from the animal husbandry officers. However, the results indicated that there is need to develop the sheep and goats production sub-sector by putting in place appropriate government policies to encourage the participation of youths and women and promote commercialization so that the farmers can increase their present holdings for improved livelihoods.

CHAPTER ONE: INTRODUCTION.

1.1 Back ground

Sheep and goats are integral part of livestock keeping in Sub-Saharan Africa mainly reared for cash , milk, meat, wool, manure, and saving or risk distribution(Kosgey, 2004). They have various social and cultural functions that vary among different cultures, socio-economies, agro-ecologies, and locations in tropical and sub Africa (Mahul, Belete, & Goodland, 2009). In Ethiopia goat production accounts for 16.8% of total meat supply (Ameha, 2008) and 16.7% of milk consumed in the country (Tsedeke, 2007). In Ethiopia sheep and goats are raised by smallholder farmers as a major source of meat and immediate cash income. The recently released poverty map by ILRI, 2006 indicate that livestock types are key indicators where families sit on the poverty scale; sheep and goats being considered poor-man's species. National estimates of livestock number for 2005 indicate that Ethiopia has 23.2 million sheep and 22.8 million goats

Livestock production in Uganda is said to contribute 5.25% of the GDP and 17% agricultural GDP respectively (MAAIF and MFPED, 2001). Sheep and goats provide about 12% of the value of livestock products consumed and 48% of the cash income generated at farm level, 46% of the value of national meat production, 25% of the domestic meat consumption with production surplus, 58% of the value of hide and skin production, 40% of fresh skins and hides production and 92% of the value of semi-processed skins and hides (Alemayehu & Ian, 1993a). It is an integral part of the agricultural system of many parts of the country. Mixed farming small holders and pastoralists own over 90% of the cattle herd and 100% of the sheep and goats. Meanwhile the export market for live goats and sheep in the oil rich Middle East Arab countries is estimated at one million small ruminants per annum (Allan, 2002), which provides potential market for goats. Teso farming system, covers the districts of Kumi, Soroti, Kaberamaido, Bukedea, and Katakwi, livestock production inclusive of small ruminants constitutes a component of the agricultural economy(Oluka, Owoyesigire, Esenu, & Ssewanyana, 2005).

Despite livestock potential in the area, productivity of sheep and goats has remained quite low presumably due to factors as: lack of technologies, lack of extension support, feed scarcity, lack of clean and safe water, drought, diseases and parasites, thieves and others. These have hindered

REFERENCES.

- Ajibefun, I., & Aderinola, E. (2004). *Determinants of technical efficiency and policy implications in traditional agricultural production: empirical study of Nigerian food crop farmers*. Paper presented at the Final Report Presentation at Bi-annual Research Workshop of African Economic Research Consortium. Nairobi, Kenya.
- Alemayehu, Z., & Ian, F. (1993a). Small Ruminant Productivity in the Central Ethiopian Mixed Farming Systems.
- Alemayehu, Z., & Ian, F. (1993b). *Small Ruminant Productivity in the Central Ethiopian Mixed Farming Systems*. Paper presented at the 4. National Livestock Improvement Conference. Addis Abeba (Ethiopia). 13-15 Nov 1991.
- Ameha, S. (2008). Sheep and Goat Meat Characteristics and Quality. *Sheep and Goat Production Handbook for Ethiopia*. Ed Alemu Yami and RC Merkel. [http://www.esgpip.org/handbook/Handbook_PDF, 2](http://www.esgpip.org/handbook/Handbook_PDF,2).
- Aphunu, A., & OKojie, D. (2011). Small ruminant production constraints among farmers in ika north-east local government area of Delta State, Nigeria. *Archives of Applied Science Research*, 3(2).
- Ayalew, W. (2000). Do smallholder farmers benefit more from crossbred (Somali× Anglo-Nubian) than from indigenous goats?
- Bakshi, M., & Wadhwa, M. (2007). Tree leaves as complete feed for goat bucks. *Small Ruminant Research*, 69(1), 74-78.
- Bayer, W. (1986). Agropastoral herding practices and grazing behaviour of cattle in the subhumid zone of Nigeria. *ILCA Bulletin*, 24, 8-13.
- Chenyambuga, S., Hanotte, O., Hirbo, J., Watts, P., Kemp, S., Kifaro, G., . . . Rege, J. (2004). Genetic characterization of indigenous goats of Sub-Saharan Africa using microsatellite DNA markers. *ASIAN AUSTRALASIAN JOURNAL OF ANIMAL SCIENCES*, 17(4), 445-452.
- Ciccione, G., Mirabelli, D., Levis, A., Gavarotti, P., Rege-Cambrin, G., Davico, L., & Vineis, P. (1993). Myeloid leukemias and myelodysplastic syndromes: chemical exposure, histologic subtype and cytogenetics in a case-control study. *Cancer genetics and cytogenetics*, 68(2), 135-139.

- Devendra, C., & Burns, M. (1983). Goat Production in the Tropics Commonwealth Agricultural Bureaux. *Farnham Royal Bucks England*, 51-57.
- Esenu, B., Ossiya, S., Serunkuma, D., Oluka, J., Alin, D., Owesigire, B., . . . Olokojo, B. (2005). Positioning agro-pastoral women in livestock production: the link between socio-economic factors and improved household food security. *Tropicultura*, 23(1), 28.
- Fabiyi, J. (1987). Production losses and control of helminths in ruminants of tropical regions. *International Journal for Parasitology*, 17(2), 435-442.
- Fitzhugh, H., & De Boer, A. (1981). 1.3 Physical and economic constraints to intensive animal production in developing countries. *BSAP Occasional Publication*, 4, 23-53.
- Gutierrez-A, N. (1986). Economic constraints on sheep and goat production in developing countries. *Small ruminant production in the developing countries*.
- Holloway, G., Nicholson, C., Delgado, C., Staal, S., & Ehui, S. (2000). Agroindustrialization through institutional innovation: Transaction costs, cooperatives and milk-market development in the east-African highlands. *Agricultural economics*, 23(3), 279-288.
- Kocho, T. (2007). Production and marketing systems of sheep and goats in Alaba, Southern Ethiopia.
- Kosgey, I. S. (2004). *Breeding objectives and breeding strategies for small ruminants in the tropics*: Wageningen Universiteit.
- Krishna, A., Kristjanson, P., Radeny, M., & Nindo, W. (2004). Escaping poverty and becoming poor in 20 Kenyan villages. *Journal of Human Development*, 5(2), 211-226.
- Kusiluka, L., & Kambarage, D. (1996). Diseases of small ruminants: a handbook. *Common Diseases of sheep and goats in Sub-Saharan Africa*.
- Lemenih, M., Feleke, S., & Tadesse, W. (2007). Constraints to smallholders production of frankincense in Metema district, North-western Ethiopia. *Journal of Arid Environments*, 71(4), 393-403.
- MAAIF, U. (2009). THE NATIONAL LIVESTOCK CENSUS REPORT 2008. *Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Entebbe/Uganda Bureau of Statistics, Kampala, Uganda*.
- Mahul, O., Belete, N., & Goodland, A. (2009). *Index-based livestock insurance in Mongolia*: International Food Policy Research Institute (IFPRI).

- Ng'ambi, J. (2012). The role of goats in food supply, poverty alleviation and prosperity in Sub-Saharan Africa. *College of Agriculture and Environmental Sciences. Consultado em, 9(09), 2014.*
- Ngambi, J., Alabi, O., & Norris, D. (2013). Role of goats in food security, poverty alleviation and prosperity with special reference to Sub-Saharan Africa: a review. *Indian Journal of Animal Research, 47(1), 1-9.*
- Ngategize, P., Bekele, T., & Tilahun, G. (1993). Financial losses caused by ovine fasciolosis in the Ethiopian highlands. *Tropical animal health and production, 25(3), 155-161.*
- Njanja, J., Gathuma, J., Gitau, G., Njeruh, F., & Kinuthia, R. (2003). Pastoralists' perception of livestock production systems and opportunities for improvement in Southwestern Marsabit, Kenya.
- Oluka, J., Owoyesigire, B., Esenu, B., & Ssewanyana, E. (2005). Small stock and women in livestock production in the Teso Farming System region of Uganda. *Small stock in development, 151.*
- Onyenucheya, F., & Ukoha, O. (2007). Loan repayment and credit worthiness of farmers under the Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB). *Agricultural Journal, 2(2), 265-270.*
- Otchere, E. (1986). Small ruminant production in tropical Africa. *Small ruminant production in the developing countries.*
- Peacock, C. (1996). *Improving goat production in the tropics: a manual for development workers:* Oxfam.
- Peacock, C. (2005). Goats—A pathway out of poverty. *Small Ruminant Research, 60(1), 179-186.*
- Randolph, T., Schelling, E., Grace, D., Nicholson, C. F., Leroy, J., Cole, D., ... Ruel, M. (2007). Role of livestock in human nutrition and health for poverty reduction in developing countries. *Journal of animal science, 85(11), 2788-2800.*
- Rege, J., Aboagye, G., Akah, S., & Ahunu, B. (1994). Crossbreeding Jersey with Ghana Shorthorn and Sokoto Gudali cattle in a tropical environment: additive and heterotic effects for milk production, reproduction and calf growth traits. *Animal Production, 59(01), 21-29.*

- Saico, S. S., & Abul, S. (2007). Socio-economic constraints on goat farming in the lowveld of Swaziland-A case study of Matsanjani. *Journal of sustainable development in Africa*, 9(3).
- Salem, H. B., & Smith, T. (2008). Feeding strategies to increase small ruminant production in dry environments. *Small Ruminant Research*, 77(2), 174-194.
- Salihi, H. M., Sharma, P. P., Getahun, D., Hedayatzadeh, M., Peters, S., Kirby, R. S., . . . Gaafer-Ahmed, H. (2008). Prenatal Tobacco Use and Risk of Stillbirth: A Case—Control and Bidirectional Case—Crossover Study. *Nicotine & tobacco research*, 10(1), 159-166.
- Scheffer, A. C., Schuurmans, M. J., Van Dijk, N., Van der Hooft, T., & De Rooij, S. E. (2008). Fear of falling: measurement strategy, prevalence, risk factors and consequences among older persons. *Age and ageing*, 37(1), 19-24.
- Sebei, P., McCrindle, C., & Webb, E. (2004). An economic analysis of communal goat production. *Journal of the South African Veterinary Association*, 75(1), p. 19-23.
- Semakula, J., Mutetikka, D., Kugonza, D. R., & Mpairwe, D. (2010). Comparison of breeding systems by smallholder goat keepers in the humid, sub-humid and semi arid agro-ecological zones of Uganda.
- Simela, L., & Merkel, R. (2008). The contribution of chevon from Africa to global meat production. *Meat science*, 80(1), 101-109.
- Solomon, A. (2003). *Livestock marketing in Ethiopia: a review of structure, performance, and development initiatives*: ILRI (aka ILCA and ILRAD).
- Stewart, D., Hilton, J., Arnold, J., Gregoire, J., Rivard, A., Archer, S., . . . Buller, C. (2006). Angiogenic gene therapy in patients with nonrevascularizable ischemic heart disease: a phase 2 randomized, controlled trial of AdVEGF121 (AdVEGF121) versus maximum medical treatment. *Gene therapy*, 13(21), 1503-1511.
- Taye, A., Hadis, M., Adugna, N., Tilahun, D., & Wirtz, R. A. (2006). Biting behavior and Plasmodium infection rates of Anopheles arabiensis from Sille, Ethiopia. *Acta tropica*, 97(1), 50-54.
- Tsedeke, K. (2007). *Production and marketing of sheep and goats in Alaba, SNNPR*. Msc thesis. Hawassa University. Awassa, Ethiopia.
- Verbeek, E., Kanis, E., Bett, R., & Kosgey, I. (2007). Socio-economic factors influencing small ruminant breeding in Kenya.